

WRITTEN REPLY

To : Mr. Ryusuke MORI, Examiner of the Patent Office

1. Identification of the International Application

PCT/JP03/12116

2. Applicant

Name : MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.
Address : 1006, Oaza Kadoma,
Kadoma-shi, Osaka 571-8501
JAPAN
Nationality : JAPAN
Residence : JAPAN

3. Attorney

Name : IKEUCHI SATO & PARTNER PATENT ATTORNEYS
Address : 26th Floor, OAP TOWER, 8-30,
Tenmabashi 1-chome, Kita-ku, Osaka-shi, Osaka
530-6026, Japan

4. Date of Notification : 27. 04. 2004 (mailing date)

5. Contents of Reply

(1) On receiving PCT Written Opinion mailed on April 27, 2004 for the present application, we answer as follows.

(2) The invention according to claim 1 of the present application is considered to lack an inventive step based on JP 10(1998)-197775 A (Document 1) and JP 1(1989)-277810 A (Document 2).

However, Document 1 fails to describe the configuration recited in claim 1 of the present application in which an actuator for moving a second holding frame in an optical axis direction is attached to a tubular cam frame including a plurality of cam grooves.

Further, in Document 2, a motor holder 23 including motors 21 and 22 is provided in a fixed condition on an inner periphery of a fixed barrel 11 together with a guide member 17. A cam barrel 18 provided with cam

grooves 18a and 18b is provided inside the guide member 17. The cam barrel 18 is provided with a notch and can be rotated inside the guide member 17 within a predetermined angle range around an optical axis with respect to the guide member 17. Thus, Document 2 also fails to describe the configuration recited in claim 1 of the present application in which the actuator for moving the second holding frame in the optical axis direction is attached to the tubular cam frame including the plurality of cam grooves.

As described above, no matter how Document 1 and Document 2 are combined, it is not possible to deduce the configuration recited in claim 1 of the present application in which the actuator for moving the second holding frame in the optical axis direction is attached to the tubular cam frame including the plurality of cam grooves.

As described in page 7, lines 15 to 19 of the description, owing to this configuration, the invention according to claim 1 of the present application produces an effect "since the actuator for driving the second lens group is provided on the cam frame without interfering with the plurality of cam grooves, it is possible to reduce the number of components thanks to a high-density mounting, reduce the diameter of the lens barrel, simplify the configuration and lower costs." This effect of the invention of the present application can be neither obtained by the lens barrel disclosed in Document 1 or 2 nor expected from Document 1 or 2.

Therefore, the invention according to claim 1 of the present application involves an inventive step over Documents 1 and 2.

(3) The invention according to claim 3 of the present application is considered to lack an inventive step based on Documents 1 and 2.

However, in the invention according to claim 3 of the present application, "at least one of the plurality of cam grooves formed on the cam frame and at least one of mounting portions of the actuator, the detecting member and the driving gear are molded with a common molding die part." As described earlier, neither Document 1 nor Document 2 describes the configuration in which the actuator for moving the second holding frame in the optical axis direction is attached to the tubular cam frame including the plurality of cam grooves. Accordingly, it is a matter of course that the configuration "at least one of the plurality of cam grooves formed on the cam frame and the actuator are molded with a common molding die part" recited in claim 3 is neither described nor suggested.

As described in page 8, lines 5 to 7 of the description, owing to this

configuration, the invention according to claim 3 of the present application produces an effect "since the number of molding die parts for resin-molding can be reduced, it is possible to reduce costs of the molding die and thus lower costs of the lens barrel."

The Written Opinion mentions "molding the cam frame out of a resin by using a molding die, which is a combination of a plurality of molding die parts, is a known technology." Even assuming that this is true, it is not possible to consider even the above-described configuration of claim 3 to be a known technology. Also, the above-noted effect of claim 3 of the present application cannot be expected from Documents 1 and 2 and the known technology.

Therefore, the invention according to claim 3 of the present application involves an inventive step over Documents 1 and 2.

(4) The invention according to claim 5 of the present application is considered to lack an inventive step based on Documents 1 and 2 and JP 11(1999)-38304 A (Document 3).

In the invention according to claim 5, "each of the guide members is fixed to the first holding frame by being press-fitted into two through holes penetrating in the optical axis direction that are spaced from each other." In other words, one guide member is fixed to the first holding frame by being press-fitted into two through holes that are formed so as to be spaced from each other.

In contrast, in Document 3, one guide pin 31 is fixed to a front frame 13 by being press-fitted into one blind hole formed in the front frame 13. Thus, Document 3 fails to disclose the configuration recited in claim 5 of the present application in which "the guide member is fixed to the first holding frame by being press-fitted into two through holes that are spaced from each other."

As described in page 8, lines 31 to 33 of the description, owing to the above-noted configuration, the invention according to claim 5 of the present application produces an effect "it is easy to adjust the degree of parallelization of the guide members with respect to the optical axis, so that the guide members can be fixed in parallel with the optical axis." This effect cannot be obtained by Document 3 in which one guide pin is fixed by being press-fitted into one blind hole.

Therefore, the invention according to claim 5 of the present application involves an inventive step over Documents 1 to 3.

(5) The invention according to claim 10 of the present application is considered to lack an inventive step based on Documents 1 and 2 and JP 5(1993)-88068 A (Document 7).

In the invention according to claim 10, an optical zooming factor at the time of turning off a power is stored in advance, and when the power is turned on, the second lens group is moved until the optical zooming factor at the time of turning off the power is achieved, and then stopped.

In contrast, in Document 7, a position of a focusing lens at the time of turning off a power is stored in advance, and when the power is turned on, the focusing lens is moved to the position at the time of turning off the power.

As described in page 11, lines 12 to 15 of the description, owing to the above-noted configuration, the invention according to claim 10 of the present application produces an effect "when the power is turned off, a set value of the last zooming position used is stored automatically. Thus, next time the power is turned on, it is possible to start capturing images at the same angle of view." This effect cannot be obtained by Document 7 in which information not about the optical zooming factor but about a focusing position is stored when turning off the power.

Therefore, the invention according to claim 10 of the present application involves an inventive step over Documents 1, 2 and 7.

(6) The invention according to claim 11 of the present application is considered to lack an inventive step based on Documents 1 and 2 and JP 7(1995)-218809 A (Document 8).

The invention according to claim 11 includes "an input system with which a user freely inputs an optical zooming factor at a time of turning on a power and a storing system for storing the optical zooming factor inputted from the input system as an initial optical zooming factor information."

In contrast, in Document 8, a reference position of a lens barrel is inputted from an input terminal 110 and stored in an E²PROM 105. Document 8 fails to mention that a user freely rewrites information stored in the E²PROM 105. In other words, in Document 8, the reference position of the lens barrel stored in the E²PROM 105 is inputted by a camera manufacturer at the factory.

As described in page 11, lines 26 to 30 of the description, owing to the above-noted configuration, the invention according to claim 11 of the present application produces an effect "since the zooming factor at the time of turning on the power can be set freely by a user, it becomes possible to change the

zooming factor depending on the scene or situation of image capturing. Consequently, it is less likely that a problem of missing a shutter chance is caused.” This effect cannot be obtained by Document 8 in which the reference position of the lens barrel cannot be changed and inputted freely by a user.

Therefore, the invention according to claim 11 of the present application involves an inventive step over Documents 1, 2 and 8.

(7) As described above, we believe that the opinion of denying the inventive step of the present application is overcome.